

view, it may happen that events in China will upset it, and that a connecting link between Burma and Yunnan by means of a railway may become a necessity.

The second point to which we desire to draw attention is the chapter on Burma's forest wealth. It is but natural that this is treated in a very full way, and we recommend its perusal to those who have up to date been hostile to forest conservancy in India and Burma. More especially Dr. Nisbet describes in full detail the great pains which are taken in ascertaining the full extent of existing rights and privileges, and the minuteness with which the requirements of the local population are provided, before any forest tract is declared a permanent State forest.

On the whole Dr. Nisbet's work may be called a very storehouse of information on Burma, to collect which must have taken him many years. If we were to find any faults with the work they would be that the author's facile pen has led him into too great a length, and that there are numerous repetitions in it. Still, those who have leisure to read the two handsome volumes will be richly rewarded for their trouble. They will find in it, not only a minute description of an interesting people, but also a record of the admirable manner in which civilised methods of administration have been successfully introduced in this far-away country in a remarkably short space of time.

#### OUR BOOK SHELF.

*The Birds of South Africa.* By A. C. Stark, completed by W. L. Sclater. Vol. ii. Illustrated. Pp. xiv + 324. (London: Porter, 1901.) Price 21s. net.

IN a review of the first volume of this work (part of the "Fauna of South Africa"), published in our columns soon after its appearance, reference was made to the tragic death of its author, Dr. Stark, in Ladysmith, at the commencement of the siege. The first volume was practically completed by the author before his death; but of its successor the manuscript was left (partly stored at Durban and partly at Ladysmith) in a state which rendered necessary a considerable amount of revision and addition on the part of whoever undertook the task of editing and preparing it for press. By desire of Dr. Stark's executors this labour was entrusted to Mr. W. L. Sclater, the editor of the series to which the volume belongs, who is to be congratulated on having carried out so successfully an undertaking of no ordinary difficulty. For, as all those who have tried it are well aware, the completion of another man's unfinished work is often a more difficult task than to write a volume *de novo*. As this volume may be regarded as in some respects a memorial of the lamented author, his portrait is very appropriately introduced as a frontispiece.

Since the general plan of the work was somewhat fully referred to in our previous notice, and as in this respect the present volume agrees in all essential points with its predecessor, nothing need be added on the present occasion. This volume continues the description of the perching-birds, taking up the thread at the shrikes, and ending with the swallows and pittas, so that the African representatives of five families are discussed. The editor has been fortunate in again securing the services of Mr. H. Grönvold as artist; and, needless to say, the illustrations are exquisitely drawn, and at the same time true to nature. Attention may be especially directed to the figure of puff-birds and their nest, which is based on

a photograph taken near Grahamstown, and forms a charming bit of bird-life. One illustration alone—that of rock-thrushes and their nest, on p. 182—has been reproduced direct from a photograph. A comparison of this with the above-mentioned picture by Mr. Grönvold leaves little doubt where the superiority lies. In addition to the text-figures this volume contains a map which should prove of much value to the students of the South African fauna.

While congratulating Mr. Sclater on the completion of this much of his arduous task, we may take the opportunity of mentioning that, with the help of Dr. Stark's note-books and papers he hopes ere long to bring out the two remaining volumes of the "Birds of South Africa."

R. L.

*Elementary Telephotography.* By Ernest Marriage. Pp. xxix + 117. (London: Iliffe and Sons, Ltd., 1901.)

THE telephotographic lens is becoming more generally used every day, so that the publication of a good elementary treatise on the chief advantages of its employment and on its successful manipulation will be received with favour. The opening chapters describe, in simple and clear language, backed up with excellent illustrations, the optical arrangements of telephotographic lenses, the different types of such lenses, the work for which they are specially adapted, and the form of camera and accessories that experience has shown to be the most satisfactory. The author lays great stress on the importance of rigidity in both the camera and support, so the beginner should take special note of this fundamental consideration.

After a chapter on the general applications of telephotography, the author gives the beginner some excellent advice in separate chapters on the special branches of the subject, namely, architecture, portraiture and the telephotography of animals, illustrating the chief points with reproductions from photographs.

Last, but by no means least in importance, are two chapters on exposure and development and useful tables. In the former it is shown, among other things, that with a little trouble the most difficult part of the whole manipulation, namely, "correct exposure of the negative," may be successfully overcome by a simple calculation, this method being rendered more practicable and easy by the use of the tables given in the latter chapter.

It may be mentioned in conclusion that the book is neatly printed on good stout paper and the illustrations are well reproduced, so that with these extra points in its favour it will form a useful addition to photographic literature.

*The British Journal Photographic Almanac, 1902.* Edited by Thomas Bedding. Pp. 1560. (London: Henry Greenwood and Co., 1901.) Price 1s.

THE forty-first yearly issue of this almanac is well up to the standard of former years, and contains a mine of useful information for both the amateur and the professional photographer.

Among the principal contents we notice an interesting, and what should prove a useful, article on "Introductory Notes on Tele-photography," by the editor, which brings together the more important facts on the subject. This is followed by a series of short contributions on practical subjects by prominent photographers, by numerous notes and suggestions of the year, and by an epitome of the advances made in 1901. The almanac portion of the volume and tables will be found as useful as ever, and the reader will find the collection of photographic formulæ and recipes, list of photographic societies, and other miscellaneous tables and information very complete.

In addition to the 600 pages of text, those devoted

to advertisements have also their interesting features, and the numerous illustrations and process plates scattered here and there add an additional attraction to the volume. The success of this present edition will be gathered from the fact that it has already been sold right out, as is stated by the *British Journal of Photography*.

*Encyclopédie Scientifique des Aide-Mémoire. Le Vin.* Par Henri Astruc. Pp. 208. (Paris : Gauthier-Villars, 1901.) Price 3'0 F.

THIS little treatise on wine-making is essentially encyclopedic in character, and as such calls for only a brief notice. The author is evidently familiar with his subject, and in the limited space at his disposal has been very successful in reviewing both the scientific and economic position of the French wine industry. There is nothing novel in the scientific questions discussed in this book, but some of the economic questions brought forward are not generally recognised in this country. For instance, here we have been inclined to regard wine growing in France as only in process of recovery from the devastation wrought by phylloxera, and it comes as a surprise to be told by the author that the wine-growers of his country are at present suffering from the effects of over-production.

This little book will be useful to anyone who desires to make a rapid survey of the present position of the French wine industry. A. J. B.

*A Commercial Geography of Foreign Nations.* By F. C. Boon, B.A. Pp. viii + 174. (London : Methuen & Co.) Price 2s.

THIS book will not assist to make commercial geography a scientific study. Like the geographical books of old time, the volume consists largely of disconnected details which no pupil ought to be asked to remember, and which produce weariness of the flesh in the unfortunate reader. If commercial geography means what Mr. Boon makes it, then it is the duty of all who are anxious for the introduction of reasonable methods of instruction in schools to condemn it at every opportunity. Here are a few examples of unqualified or loose statements which occur in the early pages of the book. "The greatest heat for the greatest number of days is on the Equator" (p. 1). "As the Equator is neared [from the Tropics] two days have vertical sunshine at each point within the Tropics, approaching gradually to the autumn and vernal equinoxes at the Equator" (p. 1). "Added to the effects of the neighbouring land or water are the similar effects of the winds that blow over them" (p. 2). "The Gulf Stream washes the coast of Norway" (p. 11). But we do not object so much to statements of this kind as to the principle of cramming pupils with information which has to be accepted without inquiry and cannot be assimilated. The less we have of commercial geography of this kind the more likely are we to create an interest in the study of the subject.

*Mining Calculations.* By T. A. O'Donahue. Pp. viii + 211. (London : Crosby Lockwood and Son, 1901.) Price 3s. 6d.

THE primary object of this little book is to enable candidates for certificates as colliery managers to obtain with a minimum of trouble a sufficient knowledge of arithmetic and mensuration to pass their statutory examinations. If the student will steadily work out the numerous useful examples given by the author, his chances of success will certainly be increased. Some of the absurdly easy arithmetical questions, quoted from the official examination papers, do not tend to enhance one's respect for the statutory certificate; however, this is no fault of the author, who has simply written a book to supply a want created by the examiners appointed under the Coal Mines Regulation Act.

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## LETTERS TO THE EDITOR.

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### The Inheritance of Mental Characters.

ALL biologists must be grateful to Prof. Karl Pearson for his extremely valuable and interesting paper reported in your issue of December 5, 1901 (p. 118). Inasmuch, however, as his conclusions are likely to be taken as the settled results of scientific research, it may be appropriate at this time to express certain doubts which naturally arise on reading the abstract. A man at the age of thirty, for example, possesses certain physical, intellectual and moral qualities. These must be due to more than one class of factors, and may possibly be due to three:—

(1) Heredity; characters derived from ancestors, including for present purposes the results of normal variation.

(2) Environment.

(3) Soul; supposing that the man is something more than an intelligent mechanism, and considering the possibility that his soul may have preexisted his advent here as an individual of *Homo sapiens*.

The third factor will be ridiculed by many, but if it has any reality it may eventually be capable of demonstration by just such methods as Prof. Pearson employs. The first and second factors are universally recognised.

Now it is apparent at once that the influence of the several factors is not the same on all the qualities of the man. Stature will depend almost wholly on the first set of factors, eye-colour wholly so. On the other hand, health will certainly depend largely on the second, so will shyness, intelligence, &c.

If, therefore, it is found that stature and eye-colour exhibit exactly (or almost exactly) the same degree of divergence from parental or fraternal standards as do health, shyness, &c., may it not be that this disproves just what it seems to prove, because A does not equal B, but equals B + x?

It may be said that the statistics given are based on pairs of brothers, whose environment must have been almost identical, and hence the second factor would not affect the divergence between them. But this appears a doubtful argument, because (1) the treatment of successive children is very commonly not the same, and the fact of being an elder child is itself influential; (2) germinal selection must be supposed to be going on from the earliest moment of existence, and very slight environmental factors may make great ultimate differences.

There is another consideration, that of the stability of the different qualities in the race. Characters which were highly variable would not appear to be inherited to the same degree as those which were very stable. This might also appear in cases of atavism, where the pendulum of variability took an exceptionally long swing, going back to ancestral features of which we possessed no record. Thus let the inheritance be expressed by ABCDEABCDEAB, &c., instead of ABABAB, &c. In the former case our data might only cover ABCD, in the latter ABAB. We should say that the individuals of the latter series came very "true," those of the former not at all, though the result in the long run might be about the same in either case. Lest it be said that the former series is wholly imaginary, I will cite the case of the domestic dog. The ordinary mongrel street-dogs in a single town would afford material for several genera and very numerous species, judging them by the physical standards we employ for wild animals. Yet the domestic dog, taken as a whole, has not changed very much in long periods. That is to say, the extraordinary variability presented is not progressive under existing conditions, and we return sooner or later to about the starting point.

T. D. A. COCKERELL.

East Las Vegas, New Mexico, U.S.A., December 20, 1901.

I AM not unmindful of the possible influence of environment in increasing the correlation of brothers. I strongly suspect that home influences have a good deal to do with the rather exaggerated value for the fraternal correlation in the category of *conscientiousness*. But certain characters, e.g. the cephalic index after three years of age, the eye-colour between twenty and thirty